

## ABSTRACT

The present invention relates to a multifunction power convertor in the field of power transmission. The multifunction power convertor consists of a rectifier circuit, a filter circuit connecting with the rectifier circuit, an inverter circuit connecting with the filter circuit, and differential mode voltage suppression reactors ( $LS_1$ ,  $LS_2$ ,  $LS_3$ ) and filter capacitor group that connect in series with the output lines (U, V, W) of the inverter circuit respectively. The characteristic of the present invention is that a closed magnetic ring is provided on the output lines (U, V, W) between the differential mode voltage suppression reactors and the filter capacitor group, and the output lines (U, V, W) wind in parallel on the closed magnetic ring. The merit of this invention is using the closed magnetic ring to insulate the high frequency signal, thus reducing the output of common mode voltage and improving the voltage output waveform; besides, the structure is very simple, with the cost and the volume and weight being reduced greatly.